to one-half of the solid residue: a fact which is especially seen in the analyses of Berzelius and Lehman, both of whom found in 60 parts of residue about 30 of urea. Lecanu, also, as the average quantity of urea in healthy urine, gives from 27 to 30 parts per mille. (*Journal de Pharmacie*, 1839, tom. xxv. p. 68.) His accounts are, however, of less value, as in his numerous analyses of urine he omitted to determine the total amount of solid residue. In the analysis given above I found the amount of urea to be about one-sixth, and Dr. Renges, in the urine after the paroxysm, found it to be one-eleventh of the whole solid residue after subtraction of the albumen. Becquerel likewise, in all the cases of Bright's disease, of which he had examined the urine, had already, with one single exception, found that the urea amounted only to one-third part, or even less, of all the solid constituents.

A *diminution of urea*, therefore, both in its *relative* proportion to *the other solid* constituents of urine, and also in *its absolute amount*, appears pretty constant in the urine of Bright's disease. But it would be rash to draw any definite conclusion merely from these results. It is necessary to gather materials before we build. Whether the source of the diminution of urea in this disease is to be sought for in an original alteration of the blood; in a deranged metamorphosis of matter in the body, qualitatio or quantitatio, or in the degeneration of the secreting organ, and the injury thereby unavoidably given to its secreting power; on all of these points farther research can alone decide.

Though in many cases, at least, the metamorphosis of the blood appears to be unaffected, yet *urea is produced, though secreted in deficient quantity and in abnormal situations;* and the blood becoming overcharged with that singular substance, produces a narcotic action upon the nervous system, just in the same manner as the bile acts in some cases of icterus.

The existence of urea in the blood, supervening on granular degeneration of the kidneys, appears from the researches of Babington, Christison, and Simon, no longer doubtful, although some others have failed in detecting it: for one positive account of an authentic observer has, in questions of this sort, more value than ten negative results. Moreover, in the serum exuded so frequently into the ventricles of the brain in cases of Bright's disease, the presence of urea has been repeatedly demonstrated. I myself, in my capacity of assistant physician in the Catherine Hospital at Stuttgart, observed one such case, where the serum in the ventricles of the brain contained urea beyond all doubt. The *quantity of the other solid constituents* of the urine in Bright's disease, seems much more subject to variation; the quantity of uric acid was, for example, found by some chemists much diminished whilst in our analysis, its quantity greatly surpasses the average of healthy urine. In the analytical methods for the exact quantitative determination of those constituents, there exist many sources of error, often scarcely avoidable, and therefore further researches are necessary to ascertain these.—*Lond. & Edin. Monthly Journ. of Med. Sci.*, Aug. 1845, from *Œsterlen's Jahrbücher für Pract. Heilkunde*, for Feb., 1845.

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13. *Miscellaneous Observations on Blood and Milk.*—This is the title of an interesting paper, read before the Royal Society of Edinburgh, on the 7th of April last, by Dr. John Davy.

The author first treats of the state of combination of the alkali in the blood. Enderlin, from his recent analysis of the ashes of the blood, has inferred that its alkaline reaction is not owing to the presence of carbonate, but of the tribasic phosphate of soda. The author, even admitting the accuracy of Enderlin's results, questions the propriety of applying them to the condition of the alkali in the liquid blood. Carbonate of soda, he observes, is decomposed when heated with phosphate of lime; added in small quantity to blood, it is not to be detected in its ashes. This may account for its not having been found in its ashes. Were the opinion referred to correct, an acid added to blood or its serum, after the action of the air-pump, ought not, on re-exhaustion, to occasion a farther disengagement of air; but he finds that it does. This with other results, induces him to give the preference to the conclusion, that blood contains the sesquicarbonate of soda.

He next considers the viscid quality of the blood particles, and their tendency to adhere together in groups distinct from their aggregation in piles, and to adhere as well to other objects. Under the microscope, using the compressor, the quality in question is still exhibited; when a cluster of blood corpuscles is broken up, and its parts set in motion, some of them, while adhering to each other, and only then, are drawn out almost to a fibre; and yet the instant the adhesion is broken, the detached particles, now solitary, recover their circular outline. This viscid property of the blood corpuscles appears to be distinct from that of coagulable lymph; lymph being viscid, not in its liquid state, when it attenuates even the serum, but in its transition state, just before and when in the act of coagulating.

The third subject treated of, is the tendency of fibrin in coagulating to a certain arrangement of its particles. In proof of this he adduces the instance of the investing pellicle or membrane of the buffy-coat; the tubes of the fibrin formed as a cast, when blood is stirred with a rod in the act of coagulating. The cyst-like cavities occasionally met with in fibrinous concretions, whether filled with the serum or puruloid fluid, found after death in the heart and great vessel;—in all which a kind of *nisus formativus* is displayed, and an arrangement more or less regular; and which may be applicable, he believes, to account for the cysts of aneurisms speedily following punctured wounds of arteries, and for the sacs of false aneurisms, continuous with, and hardly to be distinguished from, the lining membrane of the vessel.

The last subject treated of, is the effect of serum in promoting the coagulation of milk—a property which serum possesses in common with the white and yolk of the egg, on the application of heat. The results of trials of mixtures of serum and milk in different proportions are stated, from which it appears, that 1 part of the former heated with 5 of the latter will occasion its coagulation, and even when mixed with a third more. From analogy, the author infers, that serum and white of egg may have a like effect on vegetable juices containing albuminous matter similar to casein. The action of one animal fluid, and those so like as serum and milk, he refers to as a curious subject for speculation, and as deserving attention, not only in relation to culinary, and some manufacturing processes, but also, it may be, in connection with physiology, and perhaps pathology.—*Proceedings of Royal Society of Edinburgh*, vol. ii, No. 26.

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14. *Analysis of the Urine of Insane Patients*, in St. Luke's Hospital, in the year 1844. By Abr. J. Sutherland, M. D., and Edw. Rigby, M. D. (*London Med. Gazette*, June 6th, 1844.)

In examining the characters of the urine in the different forms of insanity, Drs. Sutherland and Rigby have selected that which was passed immediately after rising in the morning as being least liable to be affected by food, and therefore best calculated for affording a fair specimen of any peculiarities it might possess. The following is a summary of the results of their investigations:—

In mania and melancholia the prevailing colour of the urine is high; in dementia it is light.

It is acid in at least 80 per cent. of the mania and melancholia cases; in dementia, the proportion is much smaller—viz., 63·54 per cent.

Sediments of one sort or another occur in almost every case of mania and melancholia, especially the latter; in dementia, in only every other case.

The specific gravity in the two former species ranges most usually between 10·21 and 10·30; that of melancholia frequently exceeds even 10·30, whereas that dementia is usually found between 10·11 and 10·20.

Serous urine was a rare occurrence; viz., 7·50 in melancholia; in mania, 5·35 and dementia, only 1·04 per cent.

Excess of urea was seen most frequently in melancholia, least so in dementia.

Lithic acid and lithate of ammonia were likewise observed most frequently in melancholia, and least so in dementia.

Lithic acid being, in all three forms of insanity, of much more usual occurrence than lithate of ammonia.

Crystals of triple phosphate were met with in dementia at the rate of 25 per cent.; in mania, 23·21: and in melancholia, 6·66 per cent. Crystals of oxalate of lime were seen in every fourth case of melancholia, or, at the rate of 25 per cent. In mania, the proportion was 17·85, and in dementia, only 2·08 per cent.

Carbonates were seen most frequently in dementia and melancholia.